CLAIMS

What is claimed is:

1.   A method for assigning physical channels to time slots in a hybrid wireless time division multiple access/code division multiple access communication system, the method comprising:

providing physical channels for assignment;

providing a set of time slots for potential assignment;

arranging the set of time slots into a sequence based on a quality of each of the set of time slots; and

assigning the provided physical channels to the time slots in a time slot order of the sequence.

2.   The method of claim 1 wherein the provided physical channels are physical channels of a user service.

3.   The method of claim 1 wherein the provided physical channels are physical channels of a code composite transport channel (CCTrCH).

4.   The method of claim 1 wherein the quality of each time slot is based on in part an interference measurement and an allowed number of the provided physical channels to be assigned to that channel.

5.   The method of claim 4 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the interference measurement and the allowed number associated with each of the set of time slots, and the assigning is performed on each sequence, the method further comprising:

for successfully assigned ones of the sequences, determining a highest quality one of

the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

6.   The method of claim 4 wherein the arranging the set of time slots into the sequences uses a figure of merit for each slot of the set, for each slot of the set, the figure of merit comprises an interference measurement difference between that slot and a minimum interference slot and an allowed number of physical channels for the provided physical

5   channels in that time slot.

7.   The method of claim 6 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the interference measurements differences and the allowed number of physical channels, and the assigning is performed on each sequence, the method further comprising:

5   for successfully assigned ones of the sequences, determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

8.   The method of claim 1 for use in downlink physical channel assignments wherein the quality of each time slot is based on in part a transmit power of that slot and an allowed number of the provided physical channels to be assigned to that time slot.

9.   The method of claim 8 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the transmit power and the allowed number associated with each of the set of time slots, and the assigning is performed on each sequence, the method further comprising:

5   for successfully assigned ones of the sequences, determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the

assigned sequences.

10.   The method of claim 8 wherein the arranging the set of time slots into the sequences uses a figure of merit for each slot of the set, for each slot of the set, the figure of merit comprises a transmit power difference between that slot and a minimum transmit power slot and an allowed number of physical channels for the provided physical channels

5   in that time slot.

11.   The method of claim 10 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the transmit power differences and the allowed number, and the assigning is performed on each sequence, the method further comprising:

5   for successfully assigned ones of the sequences, determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the sequences.

12.   A radio network controller (RNC) for use in a hybrid wireless time division multiple access/code division multiple access communication system, the RNC assigning a set of physical channels to a set of time slots, the RNC comprising:

a radio resource management (RRM) device for arranging the set of time slots into

5   a sequence based on a quality of each of the set of time slots and assigning the set of physical channels to the time slots in a time slot order of the sequence.

13.   The RNC of claim 12 wherein the set of physical channels are physical channels of a user service.

14.   The RNC of claim 13 wherein the set of physical channels are physical

channels of a code composite transport channel (CCTrCH).

15.   The RNC of claim 12 wherein the quality of each time slot is based on in part an interference measurement and an allowed number of the provided physical channels to be assigned to that channel.

16.   The RNC of claim 15 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the interference measurements and the allowed number associated with each of the set of time slots, and the assigning is performed on each sequence, the method further comprising:

    for successfully assigned ones of the sequences, determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

17.   The RNC of claim 15 wherein the arranging the set of time slots into the sequences uses a figure of merit for each slot of the set, for each slot of the set, the figure of merit comprises an interference measurement difference between that slot and a minimum interference slot and an allowed number of physical channels for the set of physical channels in that time slot.

18.   The RNC of claim 17 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the interference measurement differences and the allowed number of physical channels, and the assigning is performed on each sequence, the RNC further for successfully assigned ones of the sequences, determining a highest quality of one of the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

19.   The RNC of claim 12 for use in downlink physical channel assignments wherein the quality of each time slot is based on in part a transmit power of that slot and an allowed number of the provided physical channels to be assigned to that physical channel.

20.   The RNC of claim 19 wherein the set of time slots are arranged into a plurality of sequences of varying weights associated with the transmit power and the allowed number associated with each of the set of time slots, and the assigning is performed on each sequence, the RNC for successfully assigned ones of the sequences, determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

21.   The RNC of claim 20 wherein the arranging the set of time slots into the sequences uses a figure of merit for each slot of the set, for each slot of the set, the figure of merit comprises a transmit power difference between that slot and a minimum transmit power slot and an allowed number of physical channels for the set of physical channels in that time slot.

22.   The RNC of claim 21 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the transmit power differences and the allowed number, and the assigning is performed on each sequence, the RNC for successfully assigned ones of the sequences, determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the sequences.

23.   A radio network controller (RNC) for use in a hybrid wireless time division multiple access/code division multiple access communication system, the RNC assigning a set of physical channels to a set of time slots, the RNC comprising:

means for arranging the set of time slots into a sequence based on a quality of each

5   of the set of time slots; and

means for assigning the set of physical channels to the time slots in a time slot order of the sequence.

24.   The RNC of claim 23 wherein the set of physical channels are physical channels of a user service.

25.   The RNC of claim 24 wherein the set of physical channels are physical channels of a code composite transport channel (CCTrCH).

26.   The RNC of claim 23 wherein the quality of each time slot is based on in part an interference measurement and an allowed number of the provided physical channels to be assigned to that channel.

27.   The RNC of claim 26 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the interference measurement and the allowed number associated with each of the set of time slots, and the assigning is performed on each sequence, the method further comprising:

5   for successfully assigned ones of the sequences, determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

28.   The RNC of claim 26 wherein the arranging the set of time slots into the sequences uses a figure of merit for each slot of the set, for each slot of the set, the figure of merit comprises an interference measurement difference between that slot and a minimum interference slot and an allowed number of physical channels for the set of physical channels

5   in that time slot.

29.   The RNC of claim 28 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the interference measurement differences and the allowed number of physical channels, and the assigning is performed on each sequence, the RNC further comprising:

5   means for successfully assigned ones of the sequences, for determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

30.   The RNC of claim 23 for use in downlink physical channel assignments wherein the quality of each time slot is based on in part a transmit power of that slot and an allowed number of the provided physical channels to be assigned to that time slot.

31.   The RNC of claim 30 wherein the set of time slots are arranged into a plurality of sequences of varying weights associated with the transmit power and the allowed number associated with each of the set of time slots, and the assigning is performed on each sequence, the RNC for successfully assigned ones of the sequences, determining a highest quality of one of the successful ones based on in part an overall interference and fragmentation of the assigned sequences.

32.   The RNC of claim 31 wherein the set of time slots are arranged into a plurality of sequences by varying weights associated with the transmit power differences and the allowed number, and the assigning is performed on each sequence, the RNC further comprising:

5   means for successfully assigned ones of the sequences, for determining a highest quality one of the successful ones based on in part an overall interference and fragmentation of the sequences.